

STUDIES IN THE EUPATORIEAE (ASTERACEAE). CCXVII.

THREE NEW SPECIES OF *ADENOSTEMMA*.

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Most problems in the delimitation of the American species of *Adenostemma* were resolved in the study by King and Robinson (1974), and no additions to the genus have been noted from the area during the nearly ten years since that study. It is rather unexpected, therefore, that a limited attempt to identify a single new specimen from Brasil would result in the recognition of the following three new American species.

ADENOSTEMMA FLINTII R. M. King & H. Robinson, sp. nov.

Plantae herbaceae ca. 0.5 m altae? vegetative non vel pauc ramosae. Caules sordido-virides subteretes in sicco sulcati glabri vel subglabri. Folia opposita, petiolis 2-3 cm longis angustis indistincte vel distaliter vix alatis; laminae late ovatae plerumque 4-5 cm longae et 3.5-4.5 cm latae base sub-truncatae in medio breviter acuminatae margine lateraliter argute multo serratae apice breviter argute acutae fere ad basem valde trinervatae supra et subtus plerumque glabrae vel subglabrae subtus in nervis sparse vel subdense puberulae. Inflorescentiae in axibus primariis opposito-ramosae in ramis cymoso-ramosae, bracteis primariis minute foliiformibus serrulatis caeteris minutis, ramis ultimis 0.7-1.6 cm longis sensim dense minute puberulis. Capitula late campanulata ca. 5 mm alta et 6 mm lata; squamae involucri ca. 23 subaequales biseriatae herbaceae oblongae ad 3.5 mm longae in partibus libris ca. 1.5-2.0 mm longae et 0.7-1.0 mm latae sparse minute puberulae; corollae albae? ca. 2 mm longae, tubis angustis ca. 0.5 mm longis extus sparse minute stipitato-glanduliferis; faucibus ca. 0.8 mm longis inferne sub-cylindricis superne late infundibularibus extus dense pilosulis, lobis late triangularibus ca. 0.2 mm longis et 0.3 mm latis extus inferne dense puberulis; filamenta in partibus superioribus subcylindrica ca. 0.2 mm longa; thecae ca. 0.5 mm longae; appendices antherarum ca. 0.1 mm longae et 0.2 mm latae; scapi stylorum glabri; appendices stylorum angustae ad 0.2 mm latae. Achaenia 2.5 mm longa leniter curvata subtrigona multo tuberculato-glandulifera; clavulae pappi 3 ca. 0.8 mm longe angustae glanduliferae. Grana pollinis in diametro ca. 20-23 μ m.

TYPE: NICARAGUA: 1868. C. Flint 6 (Holotype: US).

The only species previously known from Central America is the distinctive *A. hirtiflorum* Benth. with its five rather than three knobs on the pappus. The new species differs from the

latter and from all other American species of the genus by the lack of hairs on the shaft of the style. The numerous sharp serrations of the leaf margin are also distinctive.

The species is named for the collector Charles W. Flint.

ADENOSTEMMA GOYAZENSE R. M. King & H. Robinson, sp. nov.

Plantae suffruticosae ad 1.2 m altae inferne pauc ramosae. Caules sordido-virides subteretes in sicco sulcati puberuli. Folia opposita, petiolis 1-3 cm longis distaliter sensim alatis; laminae ovatae plerumque 5-9 cm longae et 1.5-5.0 cm latae base late acutae vel rotundatae in medio valde acuminatae et in petiolis decurrentes margine crenato-serratae apice acutae fere ad basem valde trinervatae supra et subtus sparse puberulae et breviter pilosae subtus in nervis dense puberulae et breviter pilosae. Inflorescentiae in internodis inferioribus elongatis, in bracteis foliiformibus decreascentes inferne non ramosae distaliter pauc capitatae, ramulis ultimis plerumque 1.0-1.7 cm longis dense minute stipitato-glanduliferis. Capitula late campanulata 7-10 mm lata et ca. 7 mm alta; squamae involucri ca. 25-30 subaequales biseriatae herbaceae oblongae 3.5-4.5 mm longae et ca. 1.3 mm latae apice rotundatae extus inferne minute stipitato-glanduliferae superne pilosulae vel scabridulaceae. Corollae albae? ca. 3.5 mm longae subcylindricae, tubis ca. 0.7 mm longis extus minute stipitato-glanduliferis, faucibus ca. 2.3 mm longis extus glanduliferis et pilosulis, lobis triangularibus ca. 0.5 mm longis et latis extus inferne dense pilosulis; filamenta in partibus superioribus base dilatata ca. 0.2 mm longa; thecae antherarum ca. 1.3 mm longae; appendices antherarum breves ca. 0.1 mm longae et 0.3 mm latae; scapi stylorum distincte hirsuti; appendices stylorum albae grosse inflatae clavatae ad. 0.8 mm latae. Achaenia 2.5-3.0 mm longa leniter curvata subtrigona dense minute stipitato-glandulifera; clavulae pappi 3 ca. 1 mm longae glanduliferae. Grana pollinis in diametro ca. 20 μ m.

TYPE: BRASIL: Goias: Município de S. João D'aliança, fazenda Corrente GO. Herbacea de mata inundada alterada com 1,2 m a altura, caule avermelhado, folhas membranaceas, bracteas verdes, flores brancas. 30-XII-1979. F. C. e Silva & R. C. Mendonça 160 (Holotype, IBGE; isotype, US).

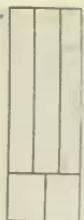
The new species is most distinctive among the members of the genus with erect habits and larger heads by the sparingly branched inflorescence having elongate basal internodes. The species differs further from the more common members of the genus in Brasil by the ovate non-triangular blades of the leaves. The veins of the leaves appear to be more densely pubescent below than in some other members of the genus, and stipitate glands on the inflorescence are rare or lacking in such species as *Adenostemma platyphyllum* Cass. which have similar shaped leaves and similarly broadened style branches.

ADENOSTEMMA VARGASII R. M. King & H. Robinson, sp. nov.

Plantae suffruticosae ad 0.5 m altæ paucæ ramosæ. Caules flavo-virides subteretes in sicco sulcati minute appresse puberuli. Folia opposita, petiolis 2-6 cm longis distaliter sensim alatis; laminae ovatae plerumque 4-12 cm longæ et 3-9 cm latae base late acutæ vel subtruncatae in medio late acuminatae in petiolis decurrentes margine crenato-serratae vel dentatae apice late acutæ fere ad basem valde trinervatae supra et subtus sparse minute appresse puberulae subtus in nervis densius minute puberulae. Inflorescentiae late cymosae multo ramosæ, ramis ultimis 3-15 mm longis dense puberulis. Capitula late campanulata ca. 9 mm lata et 6-7 mm alta; squamae involucri ca. 25-30 subaequales biseriatae herbaceæ oblongæ 3-4 mm longæ et ca. 1 mm latae apice rotundatae extus inferne dense puberulae superne glabrae vel sparse pilosæ. Corollæ virides 3.0-3.5 mm longæ in tubis et faucibus inferioribus cylindraceaæ superne leniter infundibulares, tubis ca. 0.8 mm longis glabris, faucibus inferioribus ca. 0.6 mm longis sparse pilosis superioribus ca. 1.2 mm longis glabris vel subglabris, lobis triangularibus ca. 0.4 mm longis et latis inferne extus dense minute puberulis; filamenta in partibus superioribus base dilatata ca. 0.1 mm longa et lata; thecae antherarum ca. 1 mm longæ; appendices antherarum breves ca. 0.07 mm longæ et 0.2 mm latae; scapi stylorum distincte puberuli; appendices stylorum albae medio-criter inflatae ad 0.3 mm latae. Achaenia ca. 2 mm longa leniter curvata subtrigona dense tuberculata; clavulae pappi 1-2 vestigiales 0.3-0.4 mm longæ plerumque ad 0.25 mm latae non glanduliferae. Grana pollinis in diametro ca. 23 μ m.

TYPE: PERU: Cuzco: Prov. Paucartambo. Kosñipata: Pilcopata-Atalaya. Terrenos roasados. Alt. 450-550 m. 5 de agosto 1956. *C. Vargas 11283* (Holotype, US). PARATYPES: PERU: Cuzco: Paucartambo. Atalaya-Pilcopata. borde monte. Alt. 720 m. 16 Nov. 1964. *C. Vargas 15750* (US); Atalaya, hillside & riverbank near jct. Rio Carbon with Rio Alto Madre de Dios. Shrub $\frac{1}{2}$ m. Aug. 6-7, 1974. Robin B. Foster 3019 with W. A. Foster, H. Brokaw & M. Brokaw (US).

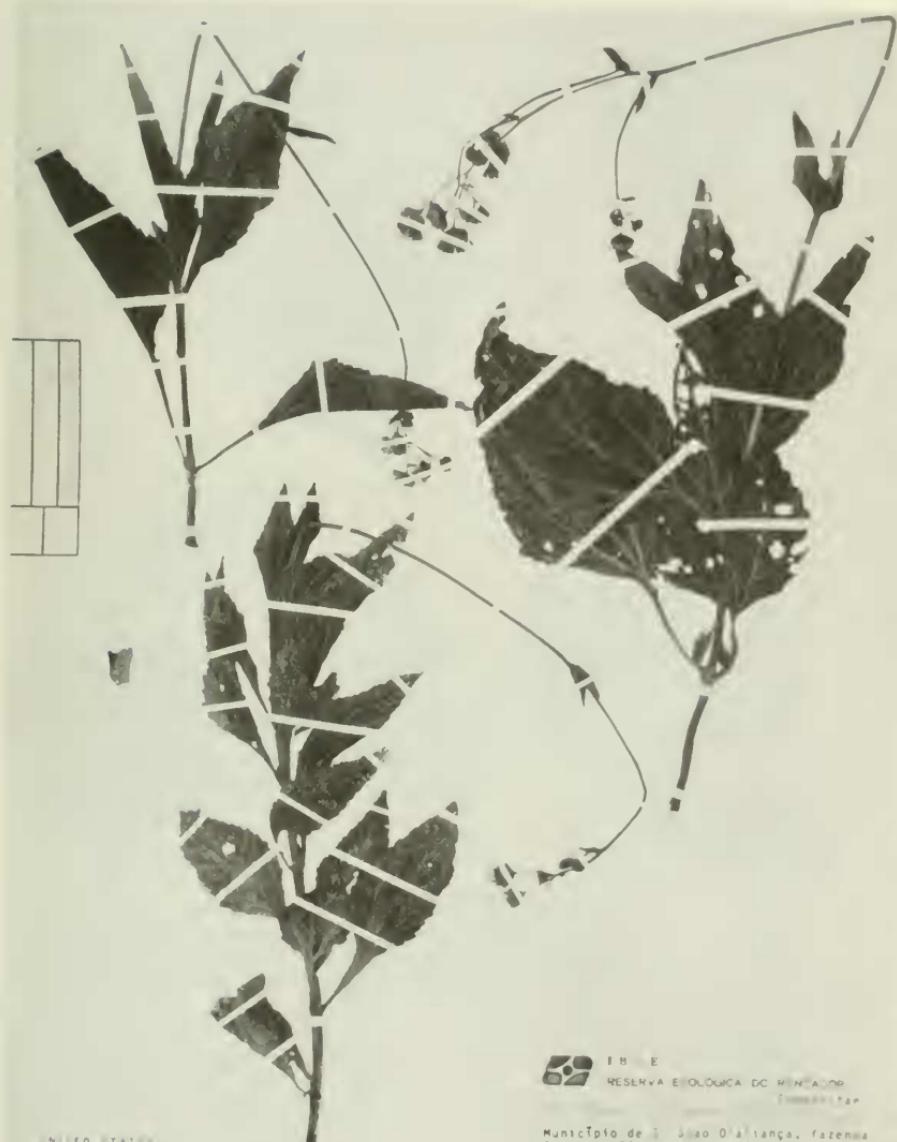
The three specimens, from a restricted area in the Dept. of Cuzco in Peru, were first noted because of a greenish color of the corollas in well-preserved material. The related *Adenostemma platyphyllum* Cass., to which the species is related and with which it has been confused, always seems to have a reddish color in the corolla throat. The distinct nature of the new species is proven by the comparatively vestigial nature of the pappus, a feature that seems to explain the restricted distribution of the species. The species also has style branches less enlarged than those of *A. platyphyllum* but not as small as those of the other species found in Peru, *A. fosbergii* K. & R.



UNITED STATES DEPARTMENT OF AGRICULTURE

Adenostemma flintii
var. flintii
R. M. King & H. Robinson

Adenostemma flintii R. M. King & H. Robinson, Holotype,
United States National Herbarium. Photos by Victor E. Krantz,
Staff Photographer, National Museum of Natural History.



IBGE
RESERVA ECOLÓGICA DO PAU DA BANDEIRA

Brasília - DF

Município de São Joaquim, fazenda
Corrente GO
Herbacea de mata inundada alterada com 1, m
altura, caule avermelhado, folhas membran
osas, bracteas verdes, flores brancas

Nº 160

30-XII-1979

Leg. F. C. e Silva & R. C. Mendonça

UNITED STATES

3862544

NATIONAL HERBARIUM

Adenostemma goyazense R. M. King & H. Robinson, Isotype,
United States National Herbarium.



Adenostemma vargasii R. M. King & H. Robinson, Holotype,
United States National Herbarium.



Enlargements of heads of *Adenostemma*. Top. *A. flintii*. Middle. *A. goyazense*. Bottom. *A. vargasii*.

King, R. M. and H. Robinson 1974. Studies in the Euphorbiaceae (Asteraceae). CXXVII. Additions to the American and Pacific Adenostemmatinae. *Adenostemma*, *Gymnocoronis* and *Sciadocephala*. *Phytologia* 29 (1): 1-20.